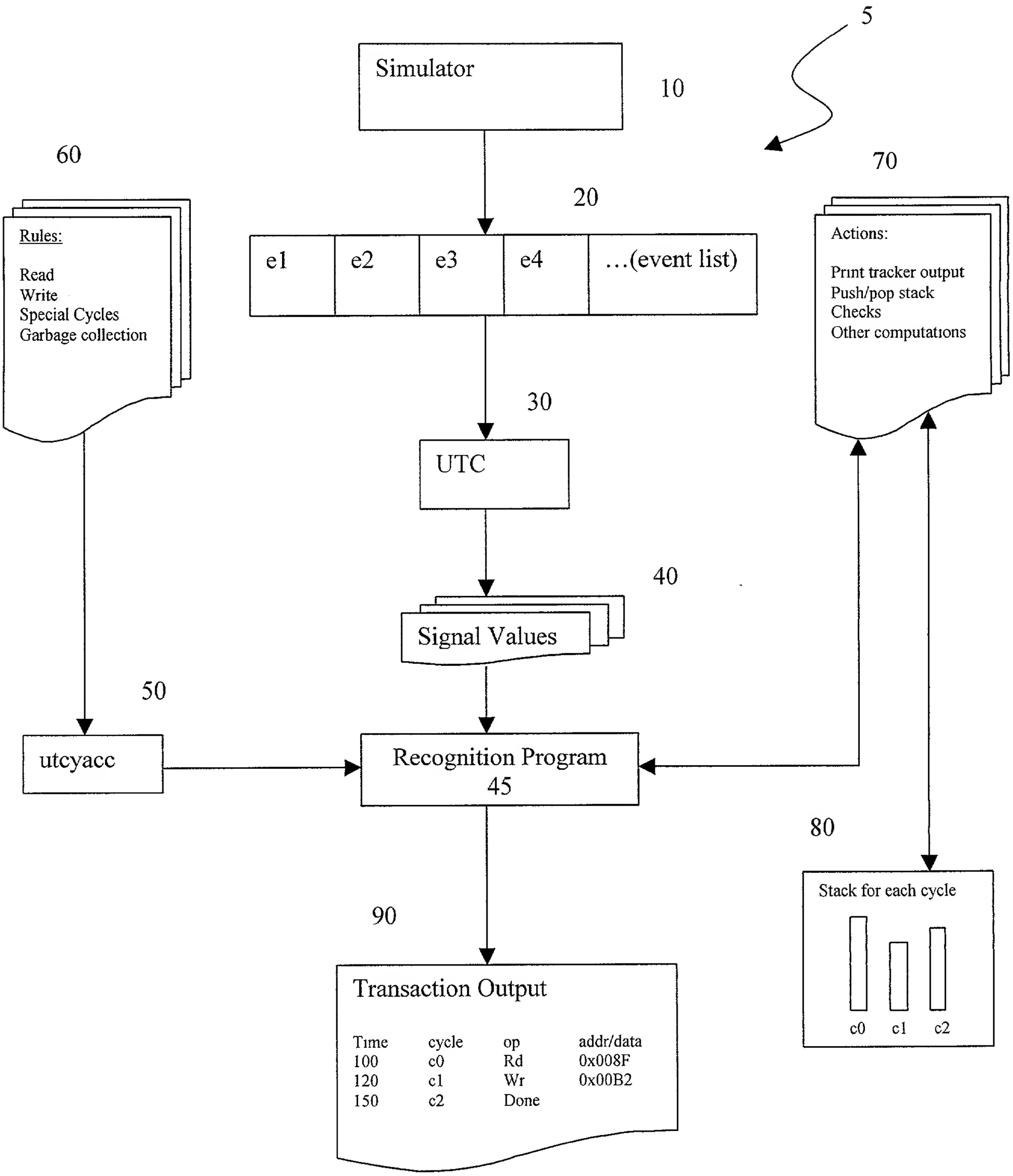
5
Simulator
10
60
70
Rules:
Read
Write
Special Cycles
Garbage collection
20
e1
e2
e3
e4
…(event list)
Actions:
Print tracker output
Push/pop stack
Checks
Other computations
30
UTC
40
Signal Values
50
utcyacc
Recognition Program
45
80
Stack for each cycle
c0
c1
c2
90
Transaction Output
Time cycle op addr/data
100 c0 Rd 0x008F
120 c1 Wr 0x00B2
150 c2 Done

FIG. 1

Table of Rules and Actions

Rule	**Production**	**Action**
DMread	DUcmd UMcmd MUdata UDdata	DMread_act()
MUdata	MUdxfer MUdxfer	MUdata_act()
UDdata	UDdxfer	UDdata_act(1)
UDdata	UDdata UDdxfer	UDdata_act(2)
DUcmd	(DUcavail=1) AND (UDcget=1)	DUcmd_act()
UMcmd	(UMcavail=1) AND (MUcget=1)	UMcmd_act()
MUdxfer	(MUdavail=1) AND (UMdget=1)	MUdxfer_act()
UDdxfer	(UDdavail=1) AND (DUdget=1)	UDdxfer_act()

FIG. 2

Table of Partial Signal Event List

Time (ns)	**Events**	**Rule**
15	DUcavail=0, UDcget=0, UMcavail=0, MUcget=1, MUdavail=0, UMdget=1, UDdavail=0, DUdget=0	
25	DUcavail=1, DUaddr=0x432B, DUop=0, DUlen=1	
30	clock =1	
35	UDcget=1, clock=0	
40	clock=1	DUcmd
54	UMcavial=1, UMaddr=0x432B, UMop=0	
60	clock=1	UMcmd
87	MUdavail=1, MUdata=0x6C45FB19	
90	clock=1	MUdxfer
93	MUdata=0x28EB38DC	
100	clock=1	MUdxfer, MUdata
105	UDdavail=1, UDdata=0x6C45	
110	clock=1	
117	DUdget=1	
120	clock=1	UDdxfer, UDdata(1)
125	UDdata=0xFB19	
130	clock=1	UDxfer, UDdata(2), DMRead

FIG. 3

STACK

Time 40	**Time 60**	**Time 90**	**Time 100**	**Time 100**
DUcmd	UMcmd	MUdxfer	MUdxfer	MUdata
	DUcmd	UMcmd	MUdxfer	UMcmd
		DUcmd	UMcmd	DUcmd
			DUcmd	

Time 120	**Time 120**	**Time 130**	**Time 130**	**Time 140**
UDdxfer	UDdata	UDdxfer	UDdata	DMRead
MUdata	MUdata	UDdata	MUdata	
UMcmd	UMcmd	MUdata	UMcmd	
DUcmd	DUcmd	UMcmd	DUcmd	
		DUcmd		

FIG. 4

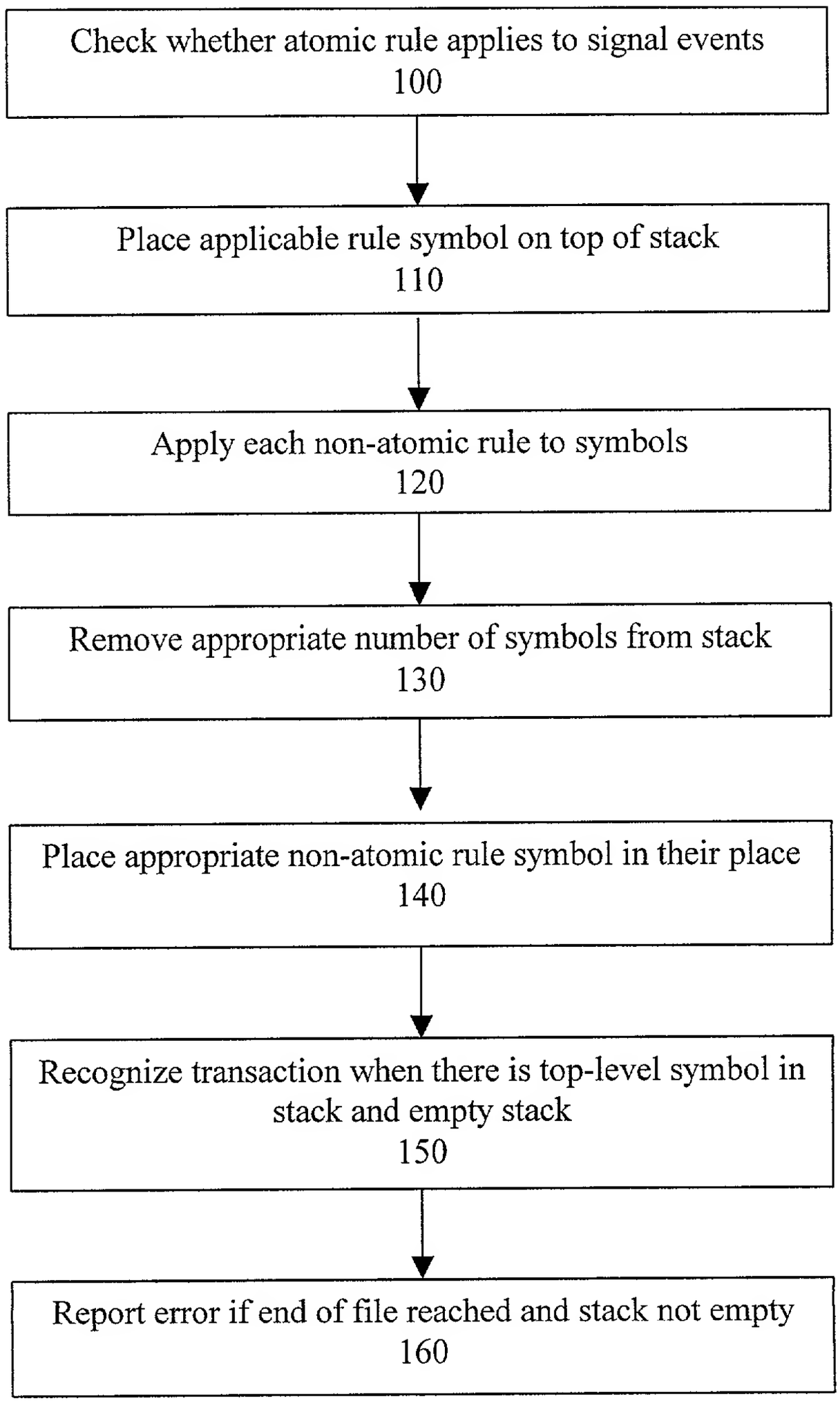
Check whether atomic rule applies to signal events
100
Place applicable rule symbol on top of stack
110
Apply each non-atomic rule to symbols
120
Remove appropriate number of symbols from stack
130
Place appropriate non-atomic rule symbol in their place
140
Recognize transaction when there is top-level symbol in stack and empty stack
150
Report error if end of file reached and stack not empty
160

FIG. 5

DMRead Process

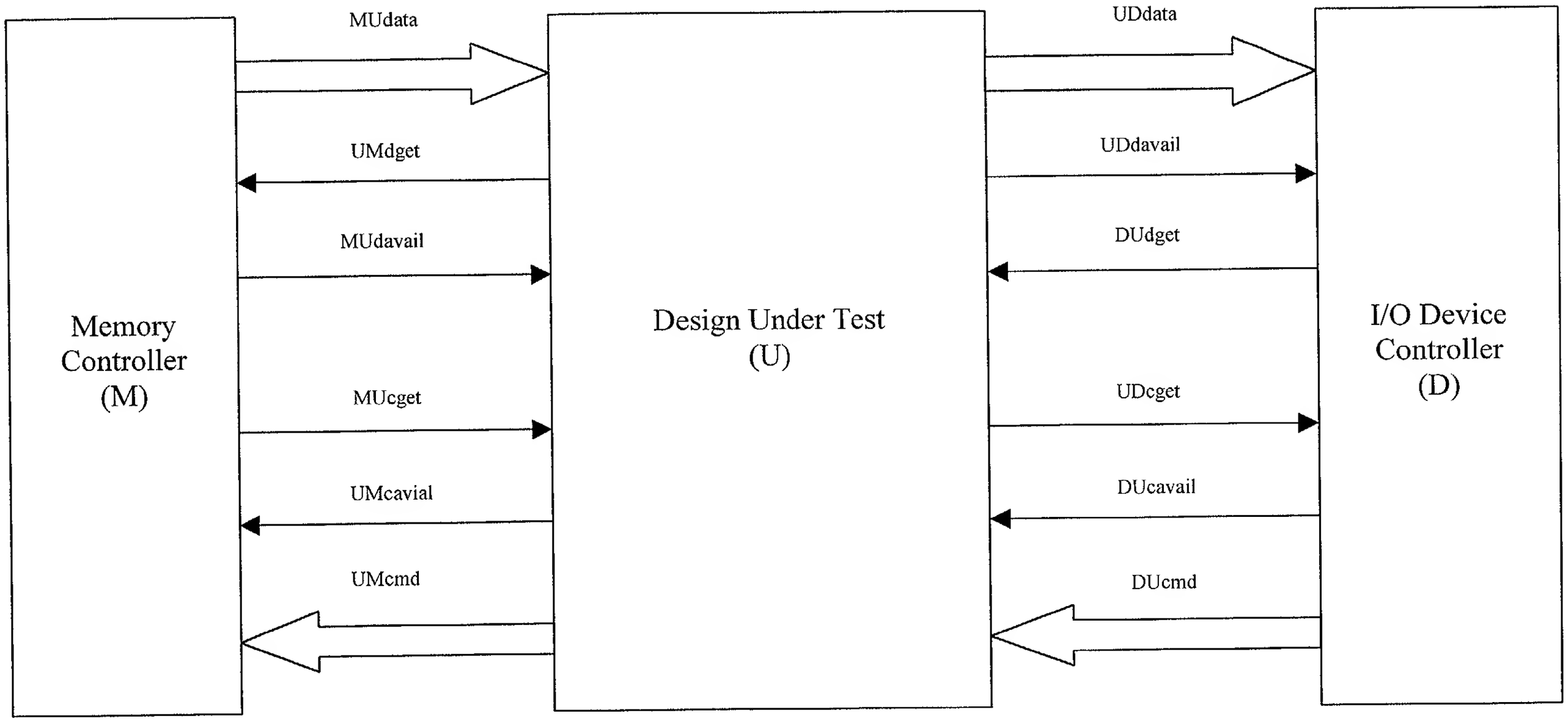

FIG. 6